DARPA WAND Program
Proposers' Day - February 27, 2007
WANN Overview

tyco Electronics MACOM

BBN TECHNOLOGIES SDRC SSC

The Johns Hopkins University APPLIED PHYSICS LABORATORY UNIVERSITY OF COLORADO 1876 UCSD Wireless@Virginia Tech

Tyco Electronics

April 2, 2007

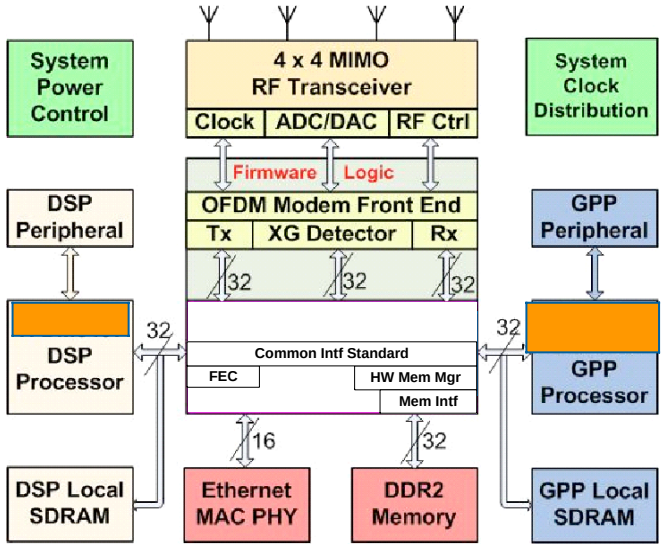
Team Overview

- M/A-COM is the Team Lead
  - Hardware development
  - API developer
  - Radio Manufacturer
- Team of experts leveraging DARPA investments in…
  - XG, MIMO, DTN, CN, Wolfpack, Rescue Transponder
  - Software layers for HW validation
    - Quick-start for network team evaluation/experimentation
- Network Advisory Board:
  - Guidance on network needs, trade-off analysis, API review
    - Helping our team to understand your challenges

We are a network agnostic radio supplier…M/A-COM is not bidding WAND

WANN Hardware

- **Radio Features**
  - Flexible, programmable, scaleable, upgradeable hardware…all for **$500**
    - High volume COTS and COTS-derived IC technology for low cost production
      - Wideband RF CMOS transceiver block
      - Tunable filter incorporated in Phase II
    - Flexible, soft baseband architecture
      - Digital COTS hardware

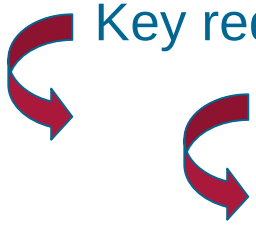


- **Network Benefits**
  - Open APIs & development environment
  - Low cost commercial hardware focus, available in WANN Phase 2
  - Ready for production ramp-up in Phase 4… without further NRE

Design for cost to meet $500 radio target and to address immediate applications

WANN APIs

- Our goal: APIs that provide full HW control and flexibility
- Our approach:
  - We defined in succession…



Key requirements to set the framework

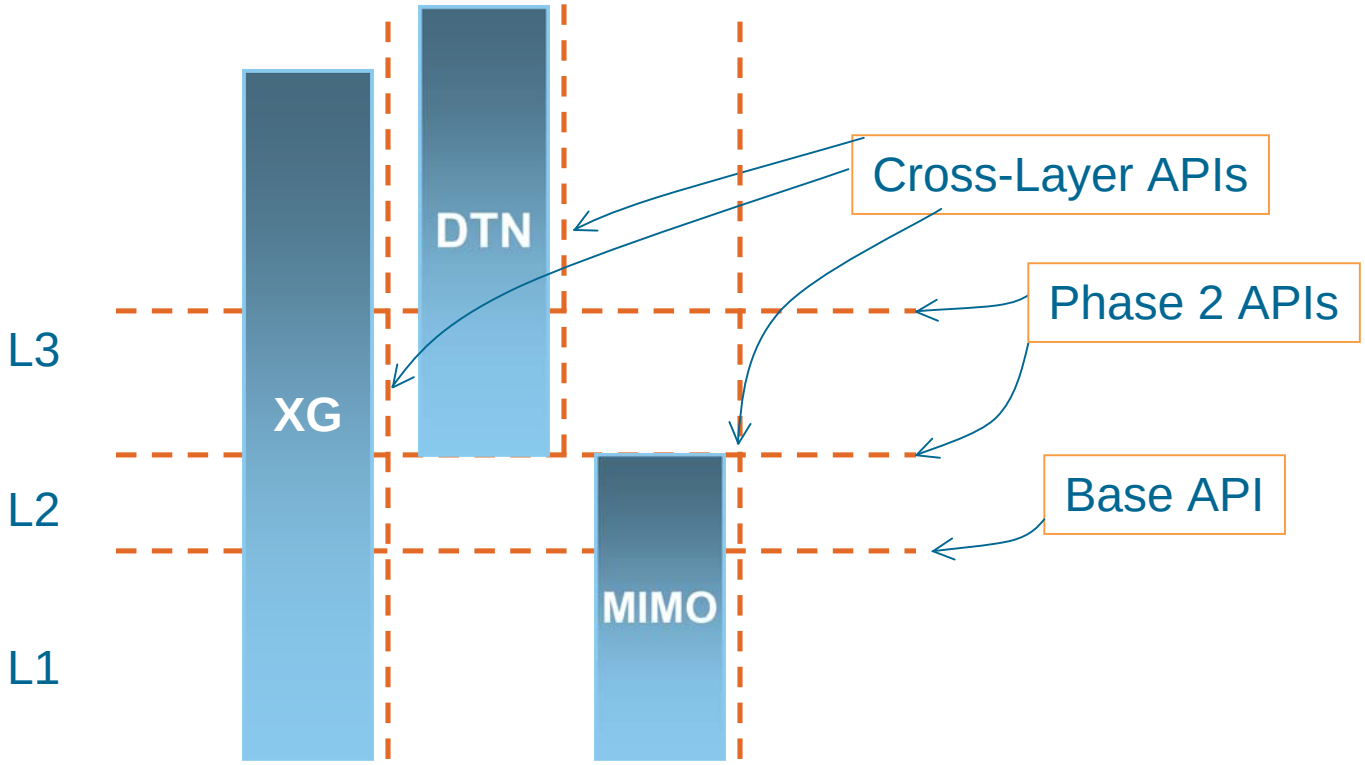
All possible knobs and meters

APIs

First focus and first draft: Physical Layer API

  - Validate with academic experts (our NAB)
  - Considered different bidders will use any or all of our stack/API

Layered API…evolving over time



- **Flexibility by providing the network developer access to modules within L1**
- **As we progress, higher layers will be accessible for your use**
- **Our APIs include Cross-Layer APIs**
  - **XG, MIMO, DTN**

WAND Proposer Interaction

- We will work with all WAND proposers to understand our radio, its performance features and associated network benefits, and to make it their own
- We embrace the open API concept and will support you, under NDA

Next steps…

- One-on-one interactions between network bidders and M/A-COM
- Our dialogue, your questions will remain M/A-COM private to protect your network ideas
  - Including our answers to you

M/A-COM…ready to support your WAND proposal and network demonstrations